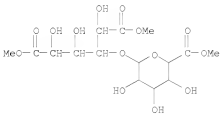
L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:959201 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER: 143:428679
TITLE: Reaction of enamines and mediated anodic oxidation of carbohydrates with the 2,2,6,6-tetramethylpiperidine-1-oxoammonium ion (TEMPO+)
AUTHOR(S): Schaemann, M.; Schaefer, H. J.
CORPORATE SOURCE: Organisch-Chemisches Institut der Universitaet Muenster, Muenster, D-48149, Germany
SOURCE: Electrochimica Acta (2005), 50(25-26), 4956-4972
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

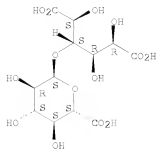
AB TEMPO+ is obtained by anodic oxidation or disproportionation of 2,2,6,6-tetramethyl-piperidine-1-oxyl (TEMPO). TEMPO+ reacts in MeCN with the enamino ester: Et (Z)-3-benzylamino-2-methyl-2-butenoate to an imidazolium cation. The reaction possibly involves the trimer of the enamino ester as intermediate. The enamine: 1-pyrrolidino-cyclohexene and TEMPO+ combine to an intermediate cation, which is hydrolyzed to the β-ketoalkoxyamine: 2-(2,2,6,6-tetramethylpiperidine-1-oxy)cyclohexanone. Cyclic voltammograms of TEMPO and the enamino ester or the enamine support the proposed mechanisms. The primary hydroxy group of carbohydrates can be selectively oxidized at the anode with TEMPO as mediator. This conversion is applied to the disaccharides: D-maltose, D-lactose, D-cellobiose and the trisaccharide:D-raffinose. The D-maltose and D-raffinose are converted in good yields and selectivity to tricarboxylic acids, the oxidns. of D-lactose and D-cellobiose are less selective due to cleavages of the disaccharides. For the mediated oxidation of D-maltose a scale-up to 67.5 mmol (24.3 g) was developed for a current controlled electrolysis in an undivided cell.

IT **51295-80-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation from TEMPO-mediated selective anodic oxidation of D-maltose)
RN 51295-80-8 CAPLUS
CN D-Gluconic acid, 3-O-(6-methyl-β-D-glucopyranuronosyl)-, dimethyl ester (9CI) (CA INDEX NAME)



IT **868236-36-6P**
RL: PNU (Preparation, unclassified); PREP (Preparation)
(preparation from TEMPO-mediated selective anodic oxidation of D-raffinose)
RN 868236-36-6 CAPLUS
CN D-Gluconic acid, 4-O-α-D-glucopyranuronosyl-, trisodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 3 Na

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:314951 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER: 136:325784
TITLE: Method for the oxidation of aldehydes, hemiacetals and primary alcohols
INVENTOR(S): Merbouh, Nabyl; Bobitt, James M.; Bruckner, Christian
PATENT ASSIGNEE(S): University of Connecticut, USA
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002032913	A1	20020425	WO 2001-US32491	20011017
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 6498269	B1	20021224	US 2000-690614	20001017
AU 2002013363	A	20020429	AU 2002-13363	20011017
PRIORITY APPLN. INFO.:			US 2000-690614 A	20001017
			WO 2001-US32491 W	20011017

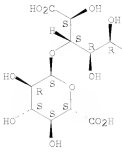
OTHER SOURCE(S): CASREACT 136:325784; MARPAT 136:325784

AB A method for the oxidation of substrates comprising treating an aqueous, basic solution of a substrate having an oxidizable functionality using an elemental halogen as terminal oxidant in the presence of an oxo-ammonium catalyst/halide co-catalyst system. Use of elemental halogen, preferably chlorine gas or elemental bromine, unexpectedly allows oxidation without significant degradation of the substrate. The substrate is preferably a monosaccharide, oligosaccharide, or polysaccharide, and the oxidizable functionality is preferably an aldehyde, hemiacetal, or a primary alc. An effective source of the oxo-ammonium catalyst is 2,2,6,6-tetramethylpiperidinyl-1-oxy (TEMPO) and a particularly economical and effective catalyst is 4-acetylamino-2,2,6,6-tetramethylpiperidinyl-1-oxy. Thus, oxidation of glucose with KBr and gaseous chlorine in aqueous KOH solution in presence of 4-acetylamino-2,2,6,6-tetramethylpiperidinyl-1-oxy as catalyst gave monopotassium glutamate in 90% yield.

IT **197388-71-9P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(oxidation of aldehydes hemiacetals and primary alcs. in presence of 4-acetylamino-2,2,6,6-tetramethylpiperidinyl-1-oxy as catalyst)

RN 197388-71-9 CAPLUS
CN D-Glucaric acid, 4-O-α-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT:	3	THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
REFERENCE COUNT:	5	THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN

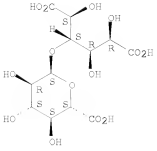
ACCESSION NUMBER:	2001:70812 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER:	134:281053
TITLE:	TEMPO-mediated oxidation of maltodextrins and D-glucose: effect of pH on the selectivity and sequestering ability of the resulting polycarboxylates
AUTHOR(S):	Thaburet, Jean-Francois; Merbouh, Nabyl; Ibert, Mathias; Marsais, Francis; Queguiner, Guy
CORPORATE SOURCE:	Institut de Recherche en Chimie Organique Fine (IRCOF), UMR 6014 (CNRS), INSA of Rouen, Mont-Saint-Aignan, F-76131, Fr.
SOURCE:	Carbohydrate Research (2001), 330(1), 21-29 CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER:	Elsevier Science Ltd.
DOCUMENT TYPE:	Journal
LANGUAGE:	English
OTHER SOURCE(S):	CASREACT 134:281053

AB Maltodextrins were oxidized to poly-glucuronic acids with the ternary oxidation system: NaOCl-NaBr-2,2,6,6-tetramethylpiperidine-1-oxyl (TEMPO). The chemoselective oxidation at the primary alc. groups was shown to be strongly pH dependent. Oxidation of polysaccharides was best achieved at pH 9.5 in order to minimize depolymn., whereas oxidation of oligosaccharides required stronger alkaline conditions (pH 11-11.5). The resulting sodium polyglucuronates present interesting sequestering properties, the best of which being obtained from maltodextrins with the highest ds.p. The same oxidation process allowed the convenient conversion of D-glucose to D-glucaric acid in high yield (>90%), under strongly basic conditions (pH>11.5).

IT **197388-71-9DP**, derivs.
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of glucuronic or poly-glucuronic acids for use as calcium sequestering agents by TEMPO-mediated regiospecific oxidation of maltodextrins or D-glucose)

RN 197388-71-9 CAPLUS
CN D-Glucaric acid, 4-O-α-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 24 THERE ARE 24 CAPLUS RECORDS THAT CITE THIS RECORD (24 CITINGS)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1997:697180 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER: 127:307619
ORIGINAL REFERENCE NO.: 127:60177a,60180a
TITLE: Oxidation of sugars with hypohalides in preparation of carboxylates used in detergents formulation
INVENTOR(S): Fleche, Guy
PATENT ASSIGNEE(S): Fleche, Guy, Fr.
SOURCE: Can. Pat. Appl., 27 pp.
CODEN: CPXXEB
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

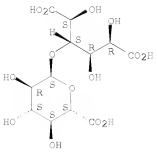
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2193034	A1	19970622	CA 1996-2193034	19961216
FR 2742755	A1	19970627	FR 1995-15269	19951221
FR 2742755	B1	19980220		
NO 9605268	A	19970623	NO 1996-5268	19961210
NO 307886	B1	20000613		
US 5831043	A	19981103	US 1996-769050	19961218
EP 798310	A1	19971001	EP 1996-402823	19961219
EP 798310	B1	20020424		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
AT 216703	T	20020515	AT 1996-402823	19961219
ES 2176420	T3	20021201	ES 1996-402823	19961219
JP 09235291	A	19970909	JP 1996-341791	19961220

PRIORITY APPLN. INFO.: FR 1995-15269 A 19951221

AB Alkaline oxidation of sugars with hypohalides in presence of TEMPO gave the corresponding carboxylates as detergents. Thus, oxidation of sorbitol in water with hydrochloric acid in presence of TEMPO gave the corresponding glucaric acid in 33% yield. These carboxylates were used in detergents formulation with a whiteness higher than polyacrylates.

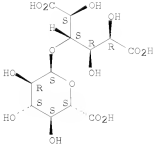
IT **197388-71-9P** **197388-72-0P**
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(oxidation of sugars with hypohalides in preparation of carboxylates as detergents)
RN 197388-71-9 CAPLUS
CN D-Glucaric acid, 4-O-α-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 197388-72-0 CAPLUS
CN D-Glucaric acid, 4-O-α-D-glucopyranuronosyl-, sodium salt (9CI) (CA INDEX NAME)

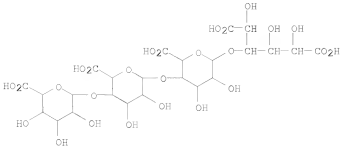
Absolute stereochemistry.



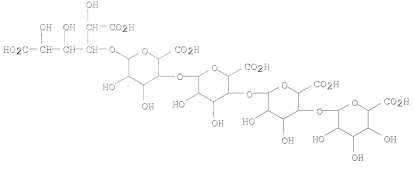
● x Na

OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

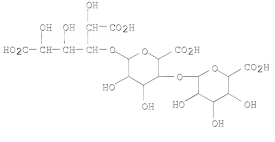
L5 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1991:674289 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER: 115:274289
ORIGINAL REFERENCE NO.: 115:46461a,46464a
TITLE: Oxidized oligogalacturonides activate the oxidation of indoleacetic acid by peroxidase
AUTHOR(S): Pressey, Russell
CORPORATE SOURCE: Richard B. Russell Res. Cent., Agric. Res. Serv., Athens, GA, 30613, USA
SOURCE: Plant Physiology (1991), 96(4), 1167-70
CODEN: PLPHAY; ISSN: 0032-0889
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Partial hydrolysis of polygalacturonic acid with a purified α-1,4-endopolygalacturonase yielded oligogalacturonides and trace amts. of a series of modified oligogalacturonides. Three of the minor products were isolated and identified as oxidized oligogalacturonides possessing termini of galactaric acid. The oxidation of indole-3-acetic acid by peroxidases was activated by oxidized oligogalacturonides but not by normal analogs.
IT **137527-91-4** **137527-92-5** **137741-67-4**
RL: BIOL (Biological study)
(indoleacetic acid oxidation by peroxidase activation by)
RN 137527-91-4 CAPLUS
CN D-Galactaric acid, O-α-D-galactopyranuronosyl-(1→4)-O-α-D-galactopyranuronosyl-(1→4)-O-α-D-galactopyranuronosyl-(1→3)- (9CI) (CA INDEX NAME)



RN 137527-92-5 CAPLUS
CN D-Galactaric acid, O-α-D-galactopyranuronosyl-(1→4)-O-α-D-galactopyranuronosyl-(1→4)-O-α-D-galactopyranuronosyl-(1→4)-O-α-D-galactopyranuronosyl-(1→3)- (9CI) (CA INDEX NAME)



RN 137741-67-4 CAPLUS
CN D-Galactaric acid, O-α-D-galactopyranuronosyl-(1→4)-O-α-D-galactopyranuronosyl-(1→3)- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L5 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER:	1991:234863 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER:	114:234863
ORIGINAL REFERENCE NO.:	114:39507a,39510a
TITLE:	Hair preparations containing sugar lactane glucuronides
INVENTOR(S):	Gibson, Walter Thomas
PATENT ASSIGNEE(S):	Unilever PLC, UK; Unilever N. V.
SOURCE:	Eur. Pat. Appl., 27 pp. CODEN: EPXXDW
DOCUMENT TYPE:	Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 398669	A2	19901122	EP 1990-305253	19900516
EP 398669	A3	19911009		
EP 398669	B1	19940105		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
CA 2016700	A1	19901116	CA 1990-2016700	19900514
JP 03017007	A	19910125	JP 1990-126527	19900516
AT 99537	T	19940115	AT 1990-305253	19900516
ES 2062361	T3	19941216	ES 1990-305253	19900516
PRIORITY APPLN. INFO.:			GB 1989-11208 A	19890516
			EP 1990-305253 A	19900516

OTHER SOURCE(S): MARPAT 114:234863

AB Hair prepns. for stimulation of hair growth comprise sugar lactone glucuronides (Markush given) as an inhibitor of glycosaminoglycanase. A hair lotion contained 3-O-β-D-glucopyranosiduronyl-L-galactono-1,4-lactone 0.1, EtOH 99.995%, and perfume q.s. Effect of the invention compds. on hair growth was assessed with rats by topical application of the comprns. twice daily on the depilated back and an increase of ≥10% hair after 3 mo treatment was observed

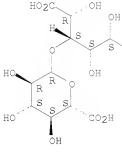
IT **134014-00-9**
RL: BIOL (Biological study)
(hair growth stimulant)

RN 134014-00-9 CAPLUS
CN D-Galactaric acid, 3-O-β-D-glucopyranuronosyl-, monolactone (9CI) (CA INDEX NAME)

CM 1

CRN 134013-99-3
CMF C12 H18 O14

Absolute stereochemistry.



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L5 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1974:60149 CAPLUS <<LOGINID::20091103>>
DOCUMENT NUMBER: 80:60149
ORIGINAL REFERENCE NO.: 80:9765a,9768a
TITLE: Gluconic glucuronide derivatives
INVENTOR(S): Tamura, Zenzo; Okada, Masashi; Matsunaga, Isao
PATENT ASSIGNEE(S): Tokyo Biochemistry Research Committee; Chugai Pharmaceutical Co., Ltd.
SOURCE: Jpn. Tokkyo Koho, 2 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 48031092	B	19730926	JP 1970-54756	19700625

PRIORITY APPLN. INFO.: JP 1970-54756 19700625

AB Acylation of gluconic glucosiduronates (I, R = H, R1-3 = lower alkyl, A = acyl) gave the corresponding compds. I (R = acyl), β-glucosiduronase inhibitors. Thus, anhydrous AcOH was added to I (R = H, R1-3 = Me) in pyridine and kept overnight at room temperature to give I (R = Ac).

IT **51295-80-8D**, D-Glucaric acid, 3-O-(6-methyl-β-D-glucopyranuronosyl)-, dimethyl ester, acyl derivs.
RL: RCT (Reactant); RACT (Reactant or reagent)
(acetylation of)

RN 51295-80-8 CAPLUS

CN D-Glucaric acid, 3-O-(6-methyl-β-D-glucopyranuronosyl)-, dimethyl ester (9CI) (CA INDEX NAME)